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Abstract

PURPOSE: To manufacture quantum well structure having a spiked hetero interface by forming the outermost side of one semiconductor layer by group V element of the semiconductor, by starting thereafter supply of group III element raw gas of the other semiconductor, and by starting supply of group V element raw gas of the other semiconductor after a time which is shorter than that of formation of one atomic layer of the element on the outermost side.

CONSTITUTION: Supply of group III element of a first semiconductor layer is stopped to interrupt growth of the first semiconductor layer. Group III element is purged during a time t_1 to stop supply of group V element. Then, supply of group III element of a second semiconductor layer is started. After a time t_2 which is shorter than that of formation of one atomic layer of group III element of the second semiconductor layer on the surface of the first semiconductor layer, supply of group V element raw material of the second semiconductor layer is started to form the second semiconductor layer. When shift from the second semiconductor layer to the first semiconductor layer is made, similar operation is carried out. Group V atom on the outermost side of first and second semiconductor layers is not substituted for group V element of second and first semiconductor layers, and metal droplet of group III element is not produced.